

«»«»Math Practice with Details Solution«»«»«»

®Janata Bank [EO] -40 টি

®Math Practice-20 টি

®Other-10 টি

®Level:Medium and Hard

®For upcoming All bank Exam

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Solution ,Edited & Complete

By

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Special Thanks:

Rubina Akhter(Tax Inspector)

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»«»«»«»«»«»Shift:Afternoon«»«»«»«»«»

****The sum of two numbers is equal to thrice their difference. If the smaller of the number is 10.find the other number**

Solution:

Let,

The larger number be= x

According to the question,

$$x+10 = 3(x-10)$$

$$\text{or, } x+10 = 3x-30$$

$$\text{or, } -2x=-40$$

$$\text{Or, } x = 20$$

Answer:20

***Question:The average age of 8 men is increased by 2 years when one of them whose age is 24 years is replaced by a woman. What is the age of the woman?**

Solution:

8 person total age increases

$$=[8*2]=16 \text{ years}$$

So,The woman age will be

$$=[16+24]$$

$$=40 \text{ years}$$

Answer:40 years

$$\text{Or, } I = (600 \times 7 \times 4) / 100$$

$$\text{Or, } I = 168 \text{ Tk}$$

$$\text{So Amount} = (600 + 168) = 768 \text{ Tk}$$

Answer: 768 Tk

*Question: The sum of first five prime number is :

Solution:

The first five prime number

$$= 2 + 3 + 5 + 7 + 11 = 28$$

Question: What is the following is equal to 3.14×10^6 ?

Solution:

$$3.14 \times 10^6$$

$$= (314/100) \times 10000$$

$$= 3140000$$

Answer: 3140000

Question: If $x = 1 - q$ and $y = 2q + 1$, then for what value of q , x is equal to y ?

Solution:

Since $x = y$

So,

$$1 - q = 2q + 1$$

$$\text{or, } -3q = 0$$

$$\text{So, } q = 0$$

Answer: 0

*Question: 3 years ago, the average age of a family of 5 members was 17 years. A baby having been born, the average age of the family is the same today. The present age of the baby is

Solution:

3 years ago 5 member average age = 17 years

Now their present average age

$$= 17 + 3 = 20 \text{ years}$$

And

$$\text{Their total age now} = 20 \times 5 = 100$$

$$5 \text{ person with baby's now total age} = 6 \times 17 = 102 \text{ years}$$

The present age of baby

$$= (102 - 100) \text{ years}$$

$$= 2 \text{ years}$$

Answer: 2 years

Question: There are two numbers such that the sum of twice the first and thrice the second is 39, while the sum of thrice the first and twice the second is 36. The largest of the two is

Solution:

Let,

The first number is x

and

Second number is y

First condition, $2x+3y = 39$ ---(1)

2nd condition $3x+2y = 36$ ----(2)

By solving the 1 & 2 equation we get $x = 6$ and $y = 9$

So, largest number is 9

Answer: 9

*Question: A person was asked to state his age in years. His reply was, "take my age three years hence, multiply it by 3 and then subtract three times my age three years ago and you will know how old I am." What was the age of person?

Solution:

Person present age = x years

After 3 years = $x+3$

Before 3 years = $x-3$

According to the question,

$$3(x+3)-3(x-3)=x$$

$$\text{Or, } 3x+9-3x+9=x$$

$$\text{Or, } x=18$$

Answer: 18 years

*Question: If $\sqrt[n]{2^n} = 64$, then the value of n is

Solution:

$$2^n = 64$$

$$\text{or, } 2^n = 2^6$$

$$\text{or, } 2n = 2^{12}$$

$$\text{So, } n=12$$

Answer: 12

*Question: In an election, 30% of the voters voted for candidate A whereas 60% of the remaining voted for candidate B. The remaining voters did not vote. If the difference between those who voted for candidate A and those who did not vote was 1200, how many individuals were eligible for casting vote in the election?

Solution:

Candidate A got = 30%

Remaining vote = $100 - 30 = 70\%$ Candidate B got = $70 \text{ of } 60\% = 42\%$

The voters did not vote

$= (70 - 42) = 28\%$

Difference of A and did not vote is $30 - 28 = 2\%$

So=====

$2\% \lll 120$

$100\% \lll$

$= (120 * 100) / 2 = 60,000$

Answer: 60000

*Question: A shopkeeper expects a gain of 22.5% on his cost price. If in a week his sale was of TK.392, what was his profit?

Solution:

Cost price = 100%

Gain = 22.5%

$122.5\% \lll 392$

$1\% \lll 392 / 122.5$

$22.5\% \lll [392 * 22.5] / 122.5$

$= 72 \text{ Tk}$

Answer: 72 Tk

*Question: 10 men working 6 hours a day can complete a work in 18 days. How many hours a day must 15 men work to complete the same work in 12 days?

Solution:

MCQ Way=====

$M_1 * T_1 / W_1 = M_2 * T_2 / W_2$

Or, $T_2 = 6 * 10 * 18 / 15 * 12$

$T_2 = 6 \text{ hrs}$

Answer: 6 hrs

*Question: Two taps A and B can fill a tank in 5 hours and 20 hours respectively. If both the taps are open then due to leakage, it took 30 minutes more to fill the tank. If the tank is full, how long will it take for the leakage alone to empty the tank?

Solution:

MCQ Way===

Both A+B time taken

$$=A*B/A+B$$

$$=5*20/5+20$$

$$=4 \text{ hrs}$$

Due to a leakage time taken to fill the tank $= (4 + .5) = 4.5$ hours

So leakage pipe time taken to empty

$$= (4.5 * 4) / 4.5 - 4$$

$$= 36 \text{ hrs}$$

Answer: 36 hrs

*Question: A train can travel 50% faster than a car. Both start from point A at the same time and reach point B 75kms away from A at the same time. On the way, however, the train lost about 12.5 minutes while stopping at the station. The speed of the car is [Difficult]

Solution:

Speed ratio of Train and Car

$$= 150:100$$

$$= 3:2$$

Let,

$$\text{Speed of train} = 3x$$

$$\text{Speed of car} = 2x$$

According to the question,

$$75/2x - 75/3x = 12.5/60$$

$$=====$$

$$=====$$

$$\text{Or, } x = 60$$

$$\text{The speed of the car} = 2 * 60$$

$$= 120 \text{ km/hr}$$

Answer: 120 km/hr

*Question: A towel, when balanced was found to have lost 20% of its length and 10% of its breadth. The percentage of decrease in area is Solution:

$$\text{First loss} = 100 - 20 = 80$$

Then second loss

$$= 80 - 80 \text{ of } 10\%$$

$$= 8\%$$

$$\text{Total decrease} = (20 + 8) = 28\%$$

Answer: 28%

«»«»«»Morning Shift«»«»«»«»«»

*Question:

$$(87*87+67*67-2*87*61)=?$$

Solutions:

Let,

$$87=a$$

$$67=b$$

$(a-b)^2$ er formula

$$(87-61)^2$$

$$= 26^2$$

$$= 676$$

Answer:676

Note:Question e answer nei

Question:Which of the following is not a prime number?

Answer:91

Question: $138.009+341.981-146.305=123.6+?$

Answer:210.085

*Question:The average of first 50 natural numbers is

Solutions:

MCQ Way=====

$$\text{Average}=[\text{Last}+\text{First}]/2$$

$$=(50+1)/2$$

$$=25.5$$

Answer:25.5

*Question:The sum of two numbers is 40 and their difference is 4.The ratio of the numbers is

Solution:

Let

The numbers x & y

So,

$$x+y = 40\text{-----}(1)$$

And

$$x-y = 4\text{-----}(2)$$

From two equations

$$x= 22$$

$$y = 18$$

Ratio = 11:9

Answer:11:9

*Question:One year ago,Punky was four times as old as her daughter Soma.Six years hence,Punky's age will exceed her daughter's age by 9 years.The ratio of the present ages of pinky and her daughter is

Solution:

Short cut way==

Back solve

$$13-4 = 9$$

$$(13-1) \div 3 = 4$$

Ratio of present age Pinky and her daughter=13:4

Answer:13:4

*Question:In a certain store the profit is 320% of the cost .If the cost increases by 25% but,the selling price remains constant,approximately what percentage of the selling price is the profits?

Solutions:

Initial cost price = 100 Tk

320% profits sell price = 420 Tk

25% increase CP = 125 Tk

Profit =(420-120)=295 Tk

Percentage of profit

$$=(295 \times 100) / 420$$

$$=70\%$$

Answer:70%

14.

$$A:C = (2:1) \times 3 = 6:3$$

$$A:B = (3:2) \times 2 = 6:4$$

$$B \text{ gets} = 157300 \times 4/13 = 48400$$

Question:A certain number of men can a piece of work in 100 days.If there were 10 less men ,it would take 10 days more for the work to finished.How many men were there originally?

Solutions:

Let,

Originally men=x

Short cut way=====

$$x \times 100 = 110(x-10)$$

$$x = 110$$

Answer:110

Question:A sum of money lent out at simple interest amounts to Tk 720 after years and to Tk 1020 after a further period of 5 years.The sum is

$$2 \text{ yr sum+profit} = 720 \text{ Tk}$$

5 yr <><><><><><><><><>300 Tk

2 yr profit <><><><><><> 300*2/5
=120 Tk

$$\text{Sum} = 720 - 120$$

$$= 600 \text{ Tk}$$

Answer:600 Tk

Question: The ratio between the perimeter and the breadth of a rectangular is 5:1. If the area of the rectangular is 216 sq.cm, what is the length of the rectangle?

Solutions:

Let,

Length be =x cm

Breadth $b = y$ cm

According to the question,

$$2(x+y):y=5:1$$

Or, $2x + 2y = 5y$

$$\text{Or } x = 3y/2 \text{-----(1)}$$

Now

Area=216

Or, $xy=216$

$$\text{Or, } 3y^2 = 216 \times 2$$

Or, $y=12$

So $x = 12 \cdot 3/2 = 18$ cm

Answer: 18 cm

*Question:How many times in a day the hands of a clock are straight?

Solution:

»Straight line=22

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»coincide line=22
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»Right angle=44

»Acute/ obtuse=44

*Question: $(0.04)^{-1.5} = ?$

Solution:

$$= 1 \div (4/100)^{1.5}$$

$$= 1 \div (1/25)^{1.5}$$

$$= 1 \div (1/5)^{(2*1.5)}$$

$$=1 \div (1/5)^3$$

$$=125$$

Answer:125

Question :The sum of two numbers is 40 and their difference is 4. The ratio of numbers is

Solution:

Let

first number is x and second number is y

$$x + y = 40 \text{ -----(1)}$$

$$x - y = 4 \text{ -----(2)}$$

Solving 1 & 2 equation

$$x : y = 22 : 18$$

$$= 11 : 9$$

Answer :11:9

*Question :A is faster than B. A and B each walk 24km. The sum of their speeds is 7 Km/hr and the sum of times taken by them is 14 hours. Then, A's speed is equal to

Solution:

Let

The speed of A = x km/hr

and

Speed of B = 7-x km/hr

According to the question,

$$24/x + 24/7-x = 14$$

$$\text{Or, } (168 - 24x + 24x) / 7x + x^2 = 14$$

$$\text{=====}$$

$$\text{=====}$$

$$\text{Or, } (x-3)(x-4)=0$$

SO

$$X=3 \text{ or } 4$$

A's speed=4 km/h

Because A is faster Than B

Answer:4 km/hrs

*Question:Two trains are running in opposite directions with the same speed. If the length of each train is 120 meters and they cross each other in 12 second , then the speed of each train(in km/hr) is

Solution:

Let

Speed of each train= x m/s

According to the question,

$$12 = (120 + 120) / (x + x)$$

$$\text{Or, } x = 10$$

So speed of each train

$$= 10 * (5/18)$$

$$= 36 \text{ KM/hrs}$$

Answer: 36 km/hr

*Question A sum of money is borrowed and paid back in two annual installments of TK.882 each allowing 5% compound interest .The sum borrowed was

[Difficult Math]

Solution:

Let,

The sum is $=x$ tk

In first years compound

$$882 = x(1 + 5/100)^1$$

$$\text{Or, } 882 = 21x/20$$

$$\text{Or, } x = 840$$

Second year,

$$\text{Amount} = (840 + 882) = 1722 \text{ tk}$$

Second year compunded,

$$1722 = x(1 + 5/100)^1$$

$$\text{Or, } 1722 = 21x/20$$

$$\text{Or, } x = 1640$$

The sum borrowed was $=1640$ tk

Answer: 1640 tk

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** এ অংক গুলো খুব বেশি এক্সাম এ না আসলেও এগুলো আপনার confidence level কে ব্যাপকভাবে বাড়িয়ে দিবে।

**Level:Hard & Medium

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Question :The costs of equities of symbol A and symbol B (in dollars) are two different positive integers. If 4 equities of symbol A and 5 equities of symbol B together costs 27 dollars, what is the total cost of 2 equities of symbol A and 3 equities of symbol B in dollars?

[Nova's GRE MATH Bible]

[IBBL PO-2017]

Solution:

Math Fact:

[এখানে বলা হয়েছে A & B টাইপের দুটো Equities এর দাম ভিন্ন। But এখানে এটা বলা হয়নি যে A and B টাইপের প্রতিটা equities দাম ভিন্ন।

তাই এখানে দেখা যাচ্ছে প্রতিটা equities এর দাম 3 Tk হলেও type A & B এর দাম যথাক্রমে 12 & 15 Tk যা ভিন্ন পূর্ণ সংখ্যা নির্দেশ করে]

X and Y be cost of the equities type of A & B

The cost of 4 equities of A = 4X

The cost of 5 equities of B = 5Y

According to the question,

$$4X + 5Y = 27$$

Let,

$$4X = P$$

$$5Y = Q$$

So P is multiple of 4 & Q is multiple of 5

Now

$$P + Q = 27$$

$$\text{Or, } P = 27 - Q$$

Since, Q is multiple of 5

$$Q = 5, 10, 15, 20, \dots \text{etc}$$

Q = 5; $P = 27 - 5 = 22$ is not multiple of 4

Q = 10; $P = 27 - 10 = 17$ is not multiple of 4

Q = 15; $P = 27 - 15 = 12$ is multiple of 4

Q = 20; $P = 27 - 20 = 7$ is not multiple of 4

So

$$Q = 15$$

$$P = 12$$

Now

$$P = 4X$$

$$\text{Or, } X = 12/4 = 3$$

$$Q = 5Y$$

$$\text{Or, } Y = 15/5 = 3$$

Therefore,

2 equities of A & 3 equities of B

$$= 2X + 3Y$$

$$= 2 \times 3 + 3 \times 3$$

$$= 6 + 9$$

=15

Answer:15

Question:Two trains, train Alpha and Beta run in opposite directions on a circular track. Train Alpha travels at a rate of 4π miles per hour and Train Beta runs at a rate of 6π miles per hour. If the track has a radius of 6 miles and the trains both start from point Delta at the same time, how long, in hours, after the trains depart will they again meet at

[GMATH]

Solution-1:

[এ Math এর ছবি একে নিবেন তাহলে Easy হবে।]

Though,the direction is opposite but the track is circular

So,

The relative speed

=Bet's speed - Alpha's speed

$=6\pi - 4\pi$

$=2\pi$ m/h

Total distance of circular track

$=2\pi r$

$=2\pi * 6$

$=12\pi$ [Radius=6 miles]

We know

Velocity=Distance/Time

Or, Time= $12\pi / 2\pi$

Or, Time=6

Answer:6 hours

Solution-2(Collected):=====

Circumference of the track $= 2\pi r = (2)(\pi)(6) = 12\pi$ miles.

At a rate of 4π miles per hour, the time for Train Alpha to complete one revolution and arrive back at point Delta $= (\text{circumference})/(\text{rate}) = (12\pi)/(4\pi) = 3$ hours.

At a rate of 6π miles per hour, the time for Train Beta to complete one revolution and arrive back at point Delta $= (\text{circumference})/(\text{rate}) = (12\pi)/(6\pi) = 2$ hours.

Since Train Alpha arrives back at point Delta every 3 hours, and Train Beta arrives back at point Delta every 2 hours, the time required for both trains to meet back at point Delta must be a MULTIPLE of the two times:

$3 * 2 = 6$ hours.

In 6 hours, Train Alpha will complete a total of 2 revolutions (one every 3 hours),

while Train Beta will complete a total of 3 revolutions (one every 2 hours), with the result that both trains will meet again at point Delta.

Answer: 6 hrs

Question: A milk vendor has 2 cans of milk. The first contains 25% water and the rest milk. The second contains 50% water. How much milk should he mix from each of the containers so as to get 12 litres of milk such that the ratio of water to milk is 3 : 5

[Indian Bix]

Solution:

Suppose,

Each can x and y litres of milk and water should be mixed to get water and milk = 3:5

Can-1:

Water = x of 25% = $x/4$

Milk = x of (100-25)% = $3x/4$

Can-2:

Water = 50% of $y = y/2$

Milk = 50% of $y = y/2$

According to the question,

$$(x/4 + y/2) / (3x/4 + y/2) = 3/5$$

=====

=====

Or, $x:y = 1:1$

Sum of ratio = $1+1=2$

Each can milk should be mixed

$$= 12 * 1/2$$

= 6 litres

Answer: 6 & 6 litres

Question: Two varieties of sugar are mixed in a certain ratio. The cost of the mix per kg is tk .50 less than that of the superior variety and tk .75 more than that of the inferior variety. What was the ratio of superior variety to inferior variety in the mixture?

[MentorsQBank]

Solution:

Let,

Cost price superior variety = x

Cost price of inferior variety = y

Superior quantity unit= a
 Inferior quantity unit= b
 Total quantity mixture= $a+b$
 Total cost price= $ax + by$
 Mean price= $ax + by/a+b$

Suppose,

Mean price= z

According to the question,

$X - Z = .50$ or $Z - X = -.50$

$Z - y = .75$ or $y - Z = -.75$

Now,

Mean price= $ax+by/a+b$

Or, $ax + by/a+b=z$

=====

=====

=====

Or, $a/b=(y-z)/(z-x)$

Or, $a/b= -.75/-.25$

Or, $a:b=3:2$

Answer:3:2

Question :A speaks truth in 75% cases and B in 80% of cases. In what percentage are they likely to contradict each other, narrating the same incident

Solution :

Let,

A = Event that A speaks the truth

B = Event that B speaks the truth

Then $P(A) = 75/100 = 3/4$

$P(B) = 80/100 = 4/5$

$P(A\text{-lie}) = 1-3/4 = 1/4$

$P(B\text{-lie}) = 1-4/5 = 1/5$

Now

A and B contradict each other =

[A lies and B true] or [B true and B lies]

= $P(A).P(B\text{-lie}) + P(A\text{-lie}).P(B)$

= $(3/5*1/5) + (1/4*4/5) = 7/20$

$$= (7/20 * 100) \%$$

$$= 35\%$$

Question: A man deposited tk 50000 at a certain interest for 1 yr. After 1 yr he received tk 55280 as both principle & interest after deduction of tk 120 as govt levy and 10% on interest as govt tax. What was the interest rate in percentage?
[MentorsQBank]

Solution:

Here,

Deposited Amount = 50000 Tk

After 1 year

Receiving Amount = 55280 Tk

So,

Interest Received = (55280 - 50000)

= 5280 Tk

Govt Levy = 120 Tk

So,

Total (120 + 5280) = 5400 Tk which is (100 - 10) = 90% amount interest

Now,

90% = ===== 5400

100% =====

=[(5400 * 100) / 90] = 6000 Tk

Interest = 6000 Tk

Principal = 50000 Tk

We know,

$I = Pnr$

Or, $r = I/Pn$

Or, $r = [6000 * 100 / 50000]$

= 12%

Answer: 12%

Question: The ratio between the ages of Mary and her mother is 1: 2 and that of Mary and her father is 1: 3 at the time of Mary's birth. Mary is 10 years old now. Find out the ratio between the ages of Mary's mother and father at this age of Mary.

[GMATH]

Solution:

According to the question,

when Mary took birth,

The ratio between the ages of Mary and her mother is 1: 2

The ratio between the ages of Mary and her father is 1: 3

Let,

'x' is the age of Mary when she is born

Hence, we can say that her mother's age is $2x$ and her father's age is $3x$ -----i

Now,

Mary is 10 years old.

Therefore, from equation 1 we can say,

Her mother's age is $2x$

i.e. $2 * 10 = 20$

and her father's age is $3x$ i.e. $3 * 10 = 30$ at this age of Mary.

Thus, the ages of Mary's mother and Mary's father are in the ratio $20:30 = 2:3$

Solution-2:

According to the question,

Mary age:Mother age=1:2

Mary age:Father age=1:3

So,

Mary age:Mother age:Father age

=1:2:3

Let,

X is the present age of each

Mary age= x

Mother age= $2x$

Father age= $3x$

From question,

$X=10$

So,

Mother age= $10*2=20$ years

Father age= $3*10=30$ years

Ratio of Mother & Father

=20:30

=2:3

Answer:2:3

Question:A can contains a mixture of two liquids A and B is the ratio 7 : 5. When 9 litres of mixture are drawn off and the can is filled with B, the ratio of A and B becomes 7 : 9. How many litres of liquid A was contained by the can initially?

[Indian Bix]

Answer:21 litres

Details:Comments box

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«»«» Details Solution«»«»«»

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Solution & Complete

By

Yousuf Ali

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Question-1:The average of first 50 natural numbers is

Solution:

MCQ Way=====

Average=[Last+First]/2

=(50+1)/2

=25.5

Answer:25.5

Question-2 :A is faster then B. A and B each walk 24km. The sum of their speeds is 7 Km/hr and the sum of times taken by them is 14 hours. Then, A;s speed is equal to

Solution:

Let

The speed of A = x km/hr

and

Speed of B = 7-x km/hr

According to the question,

$24/x + 24/7-x = 14$

Or, $(168-24x+24x)/7x+x^2=14$

=====

=====

Or, $(x-3)(x-4)=0$

SO

$X=3$ or 4

A's speed= 4 km/h

Because A is faster Than B

Answer: 4 km/hrs

Question-3:Two trains are running in opposite directions with the same speed. If the length of each train is 120 meters and they cross each other in 12 second , then the speed of each train(in km/hr) is

Solution:

Let

Speed of each train= x m/s

According to the question,

$$12=(120+120)/x+x$$

$$\text{Or}, x=10$$

So speed of each train

$$=10*(5/18)$$

$$=36 \text{ KM/hrs}$$

Question-4: A sum of money is borrowed and paid back in two annual installments of TK.882 each allowing 5% compound interest .The sum borrowed was

[Difficult Math]

Solution:

Let,

The sum is $=x$ tk

In first years compound

$$882=x(1+5/100)^1$$

$$\text{Or}, 882=21x/20$$

$$\text{Or}, x=840$$

Second year,

$$\text{Amount}=(840+882)=1722 \text{ tk}$$

Second year compunded,

$$1722=x(1+5/100)^1$$

$$\text{Or}, 1722=21x/20$$

$$\text{Or}, x=1640$$

The sum borrowed was= 1640 tk

Answer: 1640 tk

Question-5:The ratio between the perimeter and the breadth of a rectangular is $5:1$.If the area of the rectangular is 216 sq.cm ,what is the length of the rectangle?

Solutions:

Let,
 Length be $=x$ cm
 Breadth be $=y$ cm
 According to the question,
 $2(x+y):y=5:1$
 Or, $2x+2y=5y$
 Or $x=3y/2$ ----- (1)
 Now
 Area $=216$
 Or, $xy=216$
 Or, $3y^2=216 \times 2$
 Or, $y=12$
 So $x=12 \times 3/2=18$ cm
 Answer: 18 cm

Question-6: One year ago, Punky was four times as old as her daughter Soma. Six years hence, Punky's age will exceed her daughter's age by 9 years. The ratio of the present ages of pinky and her daughter is

Solution:

Let,
 One year ago Soma's age was $=x$ and
 Punky age was $=4x$
 According to the question,
 $(4x+7)-(x+7)=9$
 Or, $4x+7-x-7=9$
 Or, $3x=9$
 or, $x=3$
 Ratio of the present age of Pinky & here daughter
 $=4 \times 3+1:3+1$
 $=13:4$
 Answer: 13:4

Question-7: The average age of 8 men is increased by 2 years when one of them whose age is 24 years is replaced by a woman. What is the age of the woman?

Solution:

8 person total age increases
 $= [8 \times 2] = 16$ years
 So, The woman age will be
 $= [16+24]$

=40 years

Answer:40 years

Question-8:A makes an article for TK.120 and sells it to B at a profit of 25% .B sells it to C who sells it for TK.198 making a profit of 10%. What profit percent did B make?

Solution:

25% profit

A's Selling price=125% of 120

=150Tk

=B'Cost price

10% Profit

C's Sp=110 TK

SP 110 TK Then CP=100 tk

«»198«»«»«»«»«»«»«»=[100*198]/110

= 180 Tk

=B's Selling Price

So B profit

=[(180-150)/150]*100

=20%

Answer:20%

Question-9:The annual income and expenditure of a man and his wife are in the ratios of 5:3 and 3:1 respectively. If they decide to save equally and find a balance of tk 4000 at the end of year, what was their income?

Solution:

Suppose,

Man's income = 5x

Man's expenditure = 3x

Savings = 5x-3x = 2x

Again,

Woman's income = 3y

Woman's expenditure = y

Savings = 3y-y = 2y

They save equal balance

According to a the question,

2x=2y=4000

2x=4000

Or,x=2000

Again,

$$2y=4000$$

Or, $y=2000$

Man's income = $5 \times 2000 = 10000$ Tk
Woman's income = $3 \times 2000 = 6000$ Tk

Answer
10000 & 6000 Tk

Question-10: One of the sides of a square measures 10 cm in length. If we increase the size of two opposite sides by a couple of centimeters and decrease the length of the remaining two opposite sides by the same measure, then what will be the area of the resulting

***[MATH Fact: A couple of centimetres means একই square এর আলাদাভাবে দুইবার length & breadth বাড়ানো এবং কমানো]

Solution:

It is given that the sides of the square measure 10 cm in length.
Therefore the area of square
is side * side = $10 \times 10 = 100$ square cm.
Now, the question says that the length of same two opposite sides is reduced by a couple of centimeters

i.e. it is reduced by 2 cm and the length of the other two opposite side is increased by the same measure i.e. 2 cm only

Hence, as per this, the length of the sides of the square has changed to 8 cm and 12 cm respectively.

From this we can conclude that the resulting figure is a rectangle

Now the area of two rectangle is
= (length * breadth) + (length * breadth)
= $2 \times 8 \times 12 = 192$ square cm

But the question asks the area in meters.
Hence, $192 \text{ cm} = 192 / 100 = 0.0192$ square meter.

Answer:0.0192 square meter or 192 square cms

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«»«»«»Math practise Part-1«»«»«»«»

Question-1:Find the smallest number by which 5808 should be multiplied so that the product becomes a perfect square.

Solution:

Here ,

Factors of 5808 = $2 \times 2 \times 2 \times 2 \times 3 \times 11 \times 11$

Since 3 is odd so,

we multiplied the number by 3 then the product becomes a perfect square

Answer:3

Question-2:If $(4-x)/(2+x)=x$ what is the value of x^2+3x-4 ?

[Try your self]

Answer:0

Question-3:The purchase price of an article is Tk 48 .In order to include 15% of cost for overhead and to provide Tk 12 profit,the mark up should be

[আসলে এখানে Question Maker আমাদেরকে Mislead করার জন্য Answer এর বেলায় ধাঁধার সৃষ্টি করেছেন। Basically চেয়েছে The mark up should be what percent

Question যেভাবে আমার কাছে ছিল আমি সেভাবে দিয়েছি।]

Solution:

Here,

Cost price=48 tk

15% added on cost price then total cost= $(48+48 \text{ of } 15\%)=55.2$ Tk

If he profits 12 Tk then Market price= $(55.2+12)=67.2$ Tk

More price he tagged

$= (67.5-48)$

$= 19.2$ Tk

The percentage mark up should be

$= (19.2 \times 100 / 48)$

$= 40\%$

Answer:40%

Question-4:A waiter's salary consists of his salary and tips .During one month his tips were $5/4$ of his salary.What fraction of his income came from tips?

Solution:

Here,

Salary=4 Tk

Tips=5 Tk

Total salary + Tips=(4+5)=9 Tk

Required fraction came from tips

=5/9

Answer:5/9

Question-5:A container holds 40 gallons which is 80% water and 20% acid.How much of the water must be evaporated to produce a solution containing 50% acid?

Solution:

Acid here in container

=(20% of 40)=8 gallon

And

Water =(40-8)=32 gallon

50% acid container means half water & half acid

SO,

Required water must be evaporated=(32-8)=24 gallon

Answer:24 gallon

Question-6:In pickup van,in addition to 50 hens,there are 45 goats and 8 CAMELS with some keepers.If total number of their feet be 224 more than the number of their heads in the van,find out the number of keepers in the van.

Solution:

**Keepers means Man

Let,

Keepers be=x

Total feet

=(50*2+45*4+8*4+x*2)

=312 + 2x

Total head=(50+45+8+x)=103+x

According to the question,

(312+2x)-(103+x)=224

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Or, X=15

Answer:15

Question-7:If x equal not zero,

2x=5y and 3z=7x ,what is the ratio of z to y ?

Solution:

Here,

$$2x=5y \text{ [Multiply both sides 7]}$$

$$14x=35y\text{-----}(1)$$

And

$$3z=7x$$

$$\text{Or, } 6z=14x \text{ [Both sides multiplied by 2]}$$

$$\text{Or, } 6z=35y$$

$$\text{Or, } z:y=35:6$$

Answer:35:6

Question-8:A rectangle is 14 cm long and 10 cm wide.If the length is reduced by x cms and its width is increased also by x cms so as to make it a square , then it's area change by

Solution:Written Basis

Here,

Length of rectangle=14 cms

Wide of rectangle=10 cms

Area pod rectangle

$$=(10*14)$$

$$=140 \text{ square cms}$$

If length is reduced by x cms then New length=(14-X) cms

And x increased x cms

New width =(10+x) cms

According to the question,

If x cms increased & x cms decreased then it's a square

We know square all sides are equal

So,

$$14-X=10+x$$

$$X=2$$

$$\text{New length}=(14-2)=12\text{cms}$$

$$\text{New width}=(10+2)=12 \text{ cms}$$

$$\text{New area}=12*12=144 \text{ square cms}$$

Change of area

$$=(144-140)=4 \text{ square cms}$$

Answer:4 square cms

Question-9:A store sells an item for Tk 1.50 each or 3 times amounted to Tk 3.50 .If 202 items were sold and revenue amounted to Tk 279 ,how many of these items were sold one at a time?

Solution:

Let,

X items were sold one at a time

According to the question

$$1.5x + [(202 - X) \cdot 3.50 / 3] = 279$$

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$$X = 130$$

Answer: 130

Question-10: A salesman travels a distance of 70 miles in 2.5 hrs. How much faster, in miles per hour, must he travel the same trip in 0.75 hrs less time? How much increases his speed m/h?

Solution:

2.5 hrs required to travel 70 miles

Speed of on the way

$$= 70 / 2.5$$

$$= 28 \text{ mile/hr}$$

Thus,

He back the same distance

$$= 70 / (2.5 - .75)$$

$$= 79 / 1.75$$

$$= 40 \text{ m/h}$$

More speed need

$$= (40 - 28)$$

$$= 12 \text{ m/h}$$

Answer: 12 m/h

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